AP0053428 CHEMICAL ABST. 5/70 UR 0079

111415v Pyrimidines. VII. Synthesis and structure of some bis(2-chloroethyl)hydrazinopyrimidines. Ivin, B. A.; Glushkov, R. K.; Sochilin, E. F. (Leningrad. Tekhnol. Inst. im. Lensoveta, Leningrad, USSR). *Zh. Obshch. Khim.* 1970, 40 (1), 202–9 (Russ). Adding 9.2 g 2,4,6-trichloropyrimidine (I) in dioxane to 19.35 g $(ClCH_2CH_2)_2NNH_2.HCl$ and 20.1 g Et_3N in dioxane over 1 hr, followed by addn. of 20.1 g Et_3N and 9.2 g I, and keeping the mixt. 3–4 hr at 70° gave 5% 2-[bis(2-chloroethyl)hydrazino]-4,6-dichloropyrimidine (II), m. 104°, and 73% 4-[bis(2-chloroethyl)hydrazino]-2,6-dichloropyrimidine (III) m. 117°, sepd. on Al_2O_3. Adding 18.4 g I and 10.1 g Et_3N to 12 g $(HOCH_2CH_2)_2NNH_2$ in dioxane and keeping the mixt. 3 hr at 60° gave 5% hygroscopic 2-[bis(2-hydroxyethyl)hydrazino]-4,6-dichloropyrimidine, m. 104°, and 72% 4-[bis(2-hydroxyethyl)hydrazino]-2,6-dichloropyrimidine (IV) m. 112°, sepd. on Al_2O_3. II heated 1 hr with concd. HCl and adjusted to pH 7.5 gave 2-[bis(2-chloroethyl)hydrazino]-4-oxo-6-chloro-3,4-dihydropyrimidine, m. 138°. III refluxed 3 hr with HCl gave 92% 2-oxo-4-[bis(2-chloroethyl)hydrazino]-6-chloro-2,3-dihydropyrimidine, m. 164°; HCl salt m. 198°. Similarly was prepd. 2-oxo-4-[bis-(2-hydroxyethyl)hydrazino]-6-chloro-2,3-dihydropyrimidine, isolated as HCl salt, m. 190°. Heating IV with NaOH in aq. MeOH 1.5 hr gave 54% 2-chloro-4-[bis(2-hydroxyethyl)hydrazino]-6(5*H*)pyrimidinone as Na salt, decompd. 165°; free substance m. 157°. Uv and ir spectra are reported.

G. M. Kosolapoff

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REEL/FRAME
19830453

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USSR

UDC 547.78

GINAK, A. I., V'YUNOV, K. A., SOCHILIN, E. G., Leningrad Technological Institute imeni Lensovet

"Phosphorylation of Rhodanine with Phosphorus Oxychloride"

Leningrad, Zhurnal Obshchei Khimii, Vol 40, No 6, Jun 70, pp 1423-1424

Abstract: Sodium rhodanine was treated with 10-20 fold excess of phosphorus oxychloride in tetrahydrofuran, the mixture cooled to -10 to 20°. Dirhodanyl chlorophosphate was obtained.

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USSR

UDC 547.241

LAVRENT'YEV, A. N., MASLENNIKOV, I. G., and SOCHILIN, Ye. G., Leningrad Technological Institute imeni Lensovet

"Synthesis of Tris(heptafluoropropyl)phosphine and Mixed Tertiary Phosphines"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 12, Dec 73, pp 2663-2665

Abstract: Tris(heptafluoropropyl)phosphine, b.p. 142° has been obtained from bis(heptafluoropropyl)iodophosphine and heptafluoroiodopropane in presence of metallic antimony. Analogously trifluoromethylbis(heptafluoropropyl)phosphine, b.p. 112-113° and bis(trifluoromethyl)heptafluoropropylphosphine, b.p. 67-68° and some mixed tertiary phosphines were obtained.

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USSR

GINAK, A. I., V'YUNOV, K. A., and SOCHILIN, Ye. G. UDC 547.78

"The Synthesis of 2,4-Thiazolidinediones"

Leningrad, Zhurnal Prikladnoy Khimii, Vol XLV, No 2, Feb 1972, pp 460-462

Abstract: The several known methods for synthesizing the 2,4-thiazolidinediones are inefficient, owing to the low solubility of 5-arylidinerhodanines in aqueous solutions of monochloroacetic acid, the thermal instability of those compounds, and other factors. A new method for synthesis of the 2,4-thiazolidindiones was devised to obviate these difficulties. Rhodanine was alkylated with an alkyl halide in a nonpolar solvent in the presence of an acceptor. Then the solvent was wholly or partially removed, and ethanolic HCl was added. This mixture was heated to 30-40° for 1 hour, the thiazolidinedione precipitated. Viariations on this basic method were used to synthesize nine different members of this group. Empirical and structural formulas, yields, etc., are given for these compounds.

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1/2 006 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CHLOROMETHYLATION OF ALIPHATIC AROMATIC KETONES -U-

AUTHOR-(03)-ODOYEVA, G.A., EPSHTEYN, G.L., SOCHILIN, YE.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(3), 478-80

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, CHLORINATION, ALIPHATIC KETONE, AROMATIC KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1672

CIRC ACCESSION NO--AP0112666 STEP NO--UR/0366/70/006/003/0478/0480

UNCLASSIFIED

2/2 006

CIRC ACCESSION NO--AP0112666 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHLOROMETHYLATION OF PHCOME, 4,CLC SUB6 H SUB4 COME, OR 3,4,ME SUB2 C SUB6 H SUB3 COME IN THE PRESENCE OF H SUB3 PO SUB4 GAVE 58-61PERCENT RCOCH SUB2 CH SUB2 CL (R IS PH, 4,CLC SUB6 H SUB4, OR 3,4,ME SUB2 C SUB6 H SUB3). HOWEVER, THE CHLOROMETHYLATION OF 2,4,6,ME SUB3 C SUB6 H SUB2 AC GAVE 70PERCENT 2,4,6,3,ME SUB3 (CLCH SUB2) C SUB6 HAC, DUE TO HINDERING BY ME GROUPS IN 2,6 POSITIONS. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

1/3 019

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--UNSATURATED DERIVATIVES OF HYDANTOIN. I. SYNTHESIS OF N-METHYL DERIVATIVES OF 5,CARBOXYMETHYLIDENEHYDANTOIN AND HYDANTOIN,5, ACETIC

AUTHOR-(04)-RUTKOVSKIY, G.V., IVIN, B.A., SOCHILIN, YE.G., TSERETELI, I.YU.

COUNTRY OF INFO--USSR

S

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 389-95

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SYNTHESIS, UV SPECTRUM, NMR SPECTRUM, IR SPECTRUM, UREA DERIVATIVE, CYCLIC GROUP

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1963

STEP NO--UR/0079/70/040/002/0389/0395

CIRC ACCESSION NO--AP0112928

UNCLASSIFIED

3/3 . 019 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0112928
ABSTRACT/EXTRACT--FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA,
LENINGRAD, USSR.

UNCLASSIFIED

SOCHIVKO, V.P.

marine bionics

GLORi

TECHNICAL TRANSLATION

FSTC-HT-23- 965-70

ENGLISH TITLE: "Essays on Marine Bionics"

FOREIGN TITLE: Ocherki bioniki morya

AUTHOR: V. F. Sochivko

SOURCE: "Sudostroyeniye" Publishing Office, Leningrad, 1968

GRAPHICS NOT REPRODUCIBLE

Translated for FSTC by Techtran Corporation

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USSR UDC 669.046.5

KRUPMAN, L. I., SOCHNEV, A. Ye., DETOCHKA, V. I., TELESOV, S. A., OFENGENDEN, A. M., and NESTEROVICH, R. P.

"Steel Refining in Ladle by Self-Fluxing (Exothermic) Slag Mixtures"

Moscow, V sb. "Sovremennyye problemy kachestva stali" (MISiS), (Collection of Works. Modern Problems of Steel Quality) (Moscow Institute of Steel and Alloys). Izd-vo "Metallurgiya," No 61, 1970, pp 244-246

Translation of abstract: Results are presented of an investigation of the burning rate of self-fluxing mixtures as a function of their thermal state and humidity of the lime used. A procedure is described for preliminary melting of such mixtures with liquid refining of slag in a ladle before casting. Data are presented on experimental heats with refining by self-fluxing mixtures for preliminary melting in a 140-ton ladle. Advantages in using such mixtures are as follows: the degree of desulfurization obtained with the addition of a 3% mixture is on the average 52%; the steel contamination with nonmetallic impurities is reduced; and its plastic properties are improved. 2 tables.

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1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--PARAMETERS OF A VERTICAL HERTZ DIPOLE LOCATED ABOVE GROUND WITH A CIRCULAR SCREEN -U-

AUTHOR--SODIN, L.G.

S

COUNTRY OF INFO--USSR

SOURCE--RADIOTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2, PP 233-245

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DIPOLE ANTENNA, ANTENNA RADIATION PATTERN, ASYMPTOTIC PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1889 STEP NO--UR/0109/70/000/002/0233/0245

CIRC ACCESSION NO--AP0130716

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0130716

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOUND IS THE ASYMPTOTIC BEHAVIOR OF THE SOLUTION OF THE PROBLEM OF DIPOLE RADIATION DIFFRACTION AT THE EDGE OF A PERFECTLY CONDUCTING DISC LYING ON THE INTERFACE OF TWO MEDIA. FORMULAS ARE OBTAINED FOR CALCULATING THE RADIATION PATTERN, DIRECTIVITY, EFFICIENCY, AND RADIATION RESISTANCE OF A VERTICAL HERTZ DIPOLE LOCATED ABOVR GROUND WITH A CIRCULAR SCREEN OF QUITE LARGE DIMENSIONS.

UNCLASSIFIED

USSR

UDC 632.954:576.8

CHUNDEROVA, A. I., ZUBETS, T. P., and SOFINSKIY, A. M., Northwestern Scientific Research Institute of Agriculture

"Effects of Herbicides on the Soil Microflora on Systematic Application Under Conditions of Crop Rotation"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 47-50

Abstract: Fields on which crops were rotated in the order peas + oats, winter rye, potatoes, barley with an undersow of perennial grasses, during a period of five years were treated with the herbicides 2,4-D, DNOK, neburon, 2M-4Kh, prometrin, monuron, pyramine, propazine, and 2M-4KhM in various rotations. The soil microflora, as indicated by counts of bacteria, fungi, antinomycetes, and nitrifying bacteria, was not reduced in any instance; there was even an increase in the amounts of bacteria and actinomycetes. The nitrification capacity of the soil did not decrease under the action of the herbicides; it increased in the range of 35-43% in some cases. As shown by determinations of protease, urease, phosphatase, and invertase in the soil, the activity of hydrolytic enzymes that convert organic matter into inorganic compounds in the soil was practically unaffected during 3-4 yrs of application of the herbicides, but

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USSR

CHUDEROVA, A. I., et al., Khimiya v Sel'skom Khozyaystve, Vol 9, No 7, 1971, pp 47-50

then showed a tendency to drop in the 5th year. The decrease in enzyme activity was apparently due to a reduction in the number of weeds. The most favorable conditions with respect to both the soil microflora and biochemical processes in the soil, as indicated by the activity of enzymes were observed after applications of herbicides in the sequence 2,4-D for four years, then 2M-4KhM; or 2M-4Kh, 2,4-D, pyramin, 2M-4Kh, 2M-4KhM. The least satisfactory state of the soil in regard to biochemical activity resulted after the sequence no herbicide in the first year, 2,4-D, propazine, 2M-4Kh, 2M-4KhM.

UDC 539.2:539.16.04

USSR

LENCHENKO, V. M., SAZONOVA, YE. V., and SOFIYENKO, L. A.

"Efficiency of Charged Particle Radiators and Absorbers"

Moscow, Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

Translation: The energy emitted by radiators or absorbed by charged particle absorbers (α and β particles, Compton electrons and photoelectrons, etc.) is calculated for three configurations of radiators (absorbers): cylindrical (filamentary), film, and spherical. The energy is represented in the form

$$Q = V \int N(\varepsilon)K(\varepsilon, Z)\varepsilon d\varepsilon. \quad (1)$$

Here, V is the volume of the radiator (absorber): $N(\varepsilon)d\varepsilon$ is the number of charged particles created per unit volume of the radiator (for the absorber, per unit volume of the external emitting medium) in a defined time; ε is the initial particle energy; $K(\varepsilon, Z)$ is the efficiency of the radiator (absorber), where Z is the set of parameters characterizing the configuration of the radiators (absorbers) and also their stopping power. It is demonstrated that for a radiator, $K(\varepsilon, Z)$ depends on ε and

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LENCHENKO, V. M., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

Z only in terms of the parameters $x = R_1(\varepsilon)/d$ and n_1, and for an absorber it depends also on $R_2(\varepsilon)$ and n_2, where $R_i(\varepsilon) = A_i \varepsilon^{n_i}$ is the dependence of the path R on the particle energy in the material of the radiator or absorber (medium 1 is the material of the Bragg-Grey cell) and the surrounding medium (medium 2, the wall material of the Bragg-Grey cell).

From the calculation results it follows that $K_r(\varepsilon, Z) = K_r(x)$ varies from 0 to 1 with a decrease in the radiator dimensions (d is the diameter of the sphere or filament or the thickness of the film), that is, on varying x from $x = 0$ to $x = \infty$. The effectiveness of the absorbers varies in this case from 0 to a value of

$$K_a(x = \infty) = R_2n_2/R_1n_1(1 + n_2 - n_1). \qquad (2)$$

For the irradiated (absorbed) energy the following limiting values are obtained:

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USSR

LENCHENKO, V. M., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

for radiators

$$Q_r(x \ll 1) \simeq S \frac{n_1}{4(n_1+1)} \int N_1(\varepsilon)R_1(\varepsilon)\varepsilon \, d\varepsilon; \qquad (3)$$

$$Q_r(x \gg 1) \simeq V \int N_1(\varepsilon)\varepsilon \, d\varepsilon; \qquad (4)$$

for absorbers

$$Q_a(x \ll 1) \simeq S \frac{n_2}{4(n_2+1)} \int N_2(\varepsilon)R_2(\varepsilon)\varepsilon \, d\varepsilon; \qquad (5)$$

$$Q_a(x \gg 1) \simeq V \frac{n_2}{n_1(1 + n_2 - n_1} \int \frac{R_2(\varepsilon)}{R_1(\varepsilon)} N_2(\varepsilon)\varepsilon \, d\varepsilon. \qquad (6)$$

This means that for large dimensions of the radiators (absorbers) the energy balance is determined by the interface S between the mediums 1 and 2; for small dimensions (less than the particle path length) the energy balance is determined by the volume V

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LENCHENKO, V. M., et al., Atomnaya Energiya, Vol 29, No 1, Jul 70, pp 38-39

of the radiator or absorber. In intermediate cases with which it is most frequently necessary to deal in practice, this relation is appreciably more complicated. Equation (6) is a generalization of the Bragg-Grey theorem to the case where media 1 and 2 have different stopping powers.

UDC 621.383.8 2

USSR

BUTSLOV, M. M., Doctor of Sciences, GORNOSTAYEV, V. A., KARAPETYAN, B. O., MARKOV, A. A., Doctor of Sciences, SMOLKIN, G. Ye., Doctor of Sciences, and SOFIYEV, G. N., Candidate of Sciences

"Electron-Optical Pulse Apparatus for Astronomical Investigations"

Leningrad, Optiko-Mekhanicheskaya Promyshlennost', No 10, Oct 72, pp 54-56

Abstract: A study is made of the problems to develop an installation for the investigation of astronomical objects with transitional radiation on the basis of pulsed cascade image converter tubes. This installation must be applicable for the solution of a large circle of astronomical problems requiring short-term exposures. The demands made to the principal parameters of a similar installation are indicated. The installation and the generator of frame scannings (GFS) and shutter pulses are described by reference to the flow chart and the functional diagram. The results of testing the GFS by making use of a PIM-3 type converter are presented in form of frequency-contrast characteristics. The latter give an idea of the contrast transfer in the whole range of frequencies. Four illustr., six biblio. refs.

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USSR UDC 519.24

SOFIYEVA, YU. N., TSIRLIN, A. M.

"On the Limiting Values of the Correlation Interval and the Number of Degrees of Freedom of a Stochastic Process"

Tr. Tambovsk. in-ta khim. mashinostr. (Works of Tambov Institute of Chemical Machine Building), 1970, No 4, pp 405-410 (from RZh-Matematika, No 10, Oct 70, Abstract No 10V142)

Translation: Inequalities are obtained determining the duration of a correlation function and the number of independent ordinates of a stochastic process in terms of the number of its zeros and maxima. The inequalities found give some basis for approaching a selection of parameters for statistical processing of results obtained in an experimental determination of the characteristics of a process. Authors abstract.

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USSR

UDC 621.357.7:669.245'295

SOFRONKOV, A. N., VOLOSHIN, A. G., PRESNOV, V. A., and PERVIY, E. N.

"Structure of Ni-Ti Alloys Prepared Electrochemically"

Izv. vyssh. ucheb. zavedeniy. Khimiya i khim. tekhnol. (Studies of the Higher Institute of Learning. Chemistry and Chemical Technology), 15, No 10, 1972, pp 1567-1569 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L387 by L. S. Kanevskiy)

Translation: The conditions were studied for the simultaneous electrodeposition of Ni and Ti and the phase compositions of the compound obtained. The alloy is precipitated from a boron hydrogen fluoride and a sulfate electrolyte at a D_k of 1-20 a/dm^2. Photoelectrocolorimeter and X-ray studies showed that the concentration of Ti in the alloy fluctuated from 1-10% as a function of the D_k and the composition of the electrolyte; an increase in D_k increased the Ti concentration. The Ni-Ti alloys represent solid solutions of Ti substituting for Ni. Calculation of the crystal lattice constant a_{Ni-Li} [sic. maybe should read a_{Ni-Ti}] derived from the quadratic formula, gave a value of a_{Ni-Ti} of 3.56 and 3.54 Å for alloys obtained from the boron-hydrogen fluoride and from the sulfate electrolyte respectively.

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USSR

KHUTORNOY, A. M., SOFRONKOV, A. N., and MAKORDEY, F. V.

"Radiographic Study of Alloyed Oxide Films on Nickel in an Alkaline Environment at Increased Temperatures"

Moscow, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 687-689

Abstract: This article contains the results of a study of the behavior of nickel oxidized in advance -- pure and with additives of Li, Ba, Al, Mn -- in an 85% solution of KOH at a temperature of 150° and an oxygen pressure of 2 atm. The intensities of the (200) NiO line and the (003) γ-NiO (OH) line as functions of the time the samples are in the alkaline environment are presented. From the variation of the intensities of these lines and the colors of the samples as functions of the time they are in the alkali, it can be concluded that a nickel oxide film is formed on the surface of the pure metal samples during a period of 20 hours in the alkali (the (200) NiO line reaches a maximum at this time). Between 20 and 80 hours there is rapid formation of the hydroxide γ-NiO(OH). It is proposed that the formation of the hydroxide as a result of diffusion of the Ni^{2+} ions through the NiO layer takes place until the thickness of the γ-NiO (OH) layer reaches the magnitude at which the diffusion rate of the Ni^{2+} ions becomes stationary. The decrease in intensity of

USSR

KHUTORNOY, A. M., et al, Zashchita Metallov, Vol 6, No 6, Nov-Dec 70, pp 687-689

the (003) NiO(OH) lines at 100 hours indicates thickening of the hydroxide film, which is possible as a result of the transition of γ-NiO(OH) to soluble oxides or other soluble nickel compounds.

By comparing the variations of the (003) γ-NiO(OH) lines, it is concluded that the film of γ-NiO(OH) hydroxide formed on the previously oxidized nickel is thicker than on the pure nickel. This is explained by an increase in the width of the diffusion zone for Ni^{2+} ions as a result of nickel oxide formed earlier. This complicates diffusion of the Ni^{2+} ions to the surface of the sample. From the variation of the intensity of the (003) γ-NiO(OH) lines it follows that the thickness of the hydroxide film passes through a series of minima and maxima. This was also noted for the pure nickel samples. The consequences of adding Li, Ba, Al, and Mn and the mechanisms of their effects are discussed briefly. No incorporation of barium in the NiO lattice was detected. On adding lithium there was earlier and more intense formation of the hydroxide. It is concluded that adding aluminum leads to the formation of a film preventing the diffusion of nickel and inhibition of the formation of the hydroxide. There is intense formation of the hydroxide in the presence of manganese explained by the incorporation of manganese in the crystal lattice of the nickel oxide.

Electrochemistry

UDC 541.11

USSR

SOFRONKOV~~, A. N.~~, VOLOSHIN, A. G., PRESNOV, V. A., and PERVIY, E. N.,
Odessa State University imeni I. I. Mechnikova

"Structure of the Ni-Ti Alloy Prepared Electrochemically"

Ivanovo, Khimiya i Khimicheskaya Tekhnologiya, Vol 15, No 10, 1972, pp 1567-1569

Abstract: When the simultaneous electrodeposition of titanium and nickel is carried out, the rate of discharge of nickel ions is somewhat lower and that of titanium somewhat higher than for the deposition of each metal individually. The phase composition of such simultaneously deposited alloys was studied. The concentration of Ti, analyzed by colorimetric and X-ray techniques, ranged from 1-10% and varied with the particular acid used in the electrolyte solution and with the surface current.

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UDC 615.365.018.53.015.45:612.112.94

USSR

VIKHMAN, A. A., KARASIK, O. A., and SOFRONOV, B. N., Institute of Experimental Medicine, Academy of Medical Sciences USSR

"Sensitivity of Lymphoid Cells to Antilymphocytic Serum in Different Stages of Immunogenesis"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1971, pp 77-80

Abstract: Experiments on mice immunized with sheep erythrocytes showed that antibody-forming spleen cells are more sensitive to antilymphocytic serum (ALS) soon after immunization than they are in the later stages. The overall number of viable spleen cells decreased shortly after injection of ALS and then was restored. ALS affects both the viability and immunological function of lymphoid cells. It has a brief cytotoxic effect on the total population. Injected a day before antigenic stimulation, it sharply lowers the function of the immunocompetent cells. This shows that the lymphoid cells participating in the initial stages of immunogenesis are highly sensitive to ALS. Cells producing antibodies after antigenic stimulation or producing "normal" antibodies are more resistant to ALS than the total lymphoid cell population. Injection of ALS clearly increases the number of antibody-producing cells,

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USSR

VIKHMAN, A. A., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1971, pp 77-80

indicating that ALS has a stimulating effect on the cell population producing antibodies. The in vitro effect of ALS is different in that the antibody-producing cells are more sensitive to the serum than the overall mass of lymphoid cells. The reason may be that the same high concentration of anti-serum is not achieved in vivo or the injurious effect of the serum is quickly compensated.

USSR UDC 615.217.32.015:612.89

SAVETEYEV, N. V., and SOFRONOV, G. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"The Action of Anticholinesterase Substances on the Cholinoreception in the Superior Cervical Sympathetic Ganglion of the Cat"

Moscow, Farmakologiya i Toksikologiya, Vol 34, No 2, Mar-Apr 71, pp 140-144

Abstract: The organophosphorus cholinesterase inhibitors -- armine and GA-102 (O-pinacolyl-S(β-ethylmercaptoethyl)-methylphosphonate -- enhanced 20-100 fold the sensitivity of the superior cervical sympathetic ganglion of the cat to acetylcholine and methylfurmethide; the sensitivity to nicotine was enhanced only twofold. The activity of nicotine, with complete inhibition of cholinesterase, returned to normal 2-1/2 hours after administration of armine and GA-102. Galanthamine increased reversibly the sensitivity of ganglion to acetylcholine. 2PAM reactivated the armine-inhibited cholinesterase in the ganglion and reestablished normal sensitivity to cholinomimetics. In absence of a reactivation of cholinesterase in the ganglion treated with GA-102, 2PAM has no effect on possible increase of the sensitivity of ganglion to acetylcholine and methylfurmethide, but aids to a speedier return to normal sensitivity to nicotine.

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USSR UDC 619.576.807.7:616.981.42:636.32/.39

SOFRONOV, N. V., Candidate of Veterinary Sciences Kazakh Scientific Research Institute of Veterinary Medicine

"Nonspecific Agglutination Reactions in Sheep With Brucellosis Antigen"

Moscow, Veterinariya, No 10, 1971, p 115

Abstract: The agglutination reaction with paratyphoid antigen was positive in 33 of 44 sera taken from ewes 1 to 1½ months after lambing and negative in 11 sera taken mainly from animals that reacted with brucellosis antigen in titers of 1:25 and 1:50. All the test tubes with paratyphoid antigen were centrifuged at 3,000 rpm for 10 min, after which a drop of brucellosis antigen was added to each. In the great majority of sera, the titer decreased by one dilution after adsorption of the paratyphoid antibodies. During the following year in the prelambing period, the agent of paratyphoid was isolated from three aborted fetuses but no Brucella was found. The agglutination reaction with brucellosis antigen is considered nonspecific.

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USSR

UDC 621.771-216.5 :621.
.7.011:539.4.014.1

ROZORENOV, V. A., Engineer, MOROZOV, Doctor of Technical Sciences, LEONOV, V. F., Engineer, and SOFRONOV, Ye. I., Candidate of Technical Sciences

"Deformation and Stresses in Mounts of Roll Stands of Four-High Rolling Mills"

Moscow, Vestnik Mashinostroyeniya, No 9, Sep 73, pp 16-21

Abstract: The strength conditions in the mount of a roll stand of the four-high rolling mill 5000 of the All-Union Scientific Research, Planning, and Design Institute of Metallurgical Machinery were calculated. The deformations and stresses were determined, using Castigliano's theorem, for a simplified form of the mount according to a presented schema. The applied calculation method of the inflexibility and strength of closed type mounts considers the clearance between the mount stands and the bearings of supporting rolls and the variable stiffness of cross ties. On a level with the calculations, including the fatigue strength, the stressed condition of the mount was also investigated by the polarization-optical method on a simplified model

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USSR

ROZORENOV, V. A., et al., Vestnik Mashinostroyeniya, No 9, Sep 73, pp 16-21

of optically active ED6-M material. The results are discussed by reference to optical stress-strain pictures (photoelastic method) and the stress-strain diagram of contour stresses. Determined values of the reserve strength factor and of the deformation and rigidity of the mount are interpretated. Four figures, two tables, twelve formulas, two bibliographic references.

2/2

1/2 011 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--YELLOW PLATINUM SULFATE FORMED DURING THE REACTION OF H SUB2 (PTCL
SUB6) WITH SULFURIC ACID -U-
AUTHOR-(02)-GINZBURG, S.I., SOFRONKOVA, G.M.

5

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(3), 723-7

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--POTENTIOMETRIC TITRATION, MAGNETIC SUSCEPTIBILITY, PLATINUM
COMPOUND, SULFATE, SULFURIC ACID, PLATINUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1881 STEP NO--UR/0078/70/015/003/0723/0727

CIRC ACCESSION NO--AP0115700
UNCLASSIFIED

2/2 011

CIRC ACCESSION NO--AP0115700 UNCLASSIFIED PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. YELLOW K SUB5 H SUB3(PT SUB4(HSO)SUB4)SUB3 SO SUB4 O SUB5) (I) FORMED WHEN H SUB2 (PTCL SUB6) WAS TREATED WITH H SUB2 SO SUB4 AT THE B. TEMP. OF THE SOLN. I HAS GAMMA 1.690 AND ALPHA 1.604 AND IR SPECTRA PROVE THE PRESENCE OF HSO SUB4 PRIME NEGATIVE AND BIDENTATE SO SUB4 PRIME2 NEGATIVE. ON HEATING, HSO SUB4 PRIME NEGATIVE DISAPPEARS FROM THE IR SPECTRA OF I IST AT SIMILAR TO 400DEGREES AND THE BIDENTATE SO SUB4 PRIME2 NEGATIVE AT HIGHER TEMPS. I IS SOL. IN WATER, DILD. H SUB2 SO SUB4, AND IN HOT H SUB2 SO SUB4. POTENTIOMETRIC TITRN. INDICATES THAT THE APPARENT OXIDN. STATE OF PT IN I IS 3 POSITIVE. HOWEVER, USE OF MAGNETIC SUSCEPTIBILITY DATA INDICATES THAT I CONTAINS PT(II) AND PT(IV).

UNCLASSIFIED

USSR

UDC 624.072.2:539.385

SOFRONOV, YU. D., Kazan Aviation Institute

"Design of Minimum Weight Rod Structures of Equal Service Life"

Kiev, Problemy Prochnosti, No 6, 1973, pp 26-30

Abstract: The problem of the design of rod constructions of minimum weight is formulated so that the rate of fatigue crack growth is less than or equal to the permissible rate and so that structures of specified weight or volume will have a minimum rate of fatigue crack propogation. The permissible stress is derived for the condition of service life which causes the rate of fatigue crack growth to be equal to the permissible rate. Examples are presented for design of beams and girders of comparable service life in which the fatigue crack is propagated with a permissible rate where it would not have developed. 3 figures, 6 bibliographic references.

1/1

USSR

UDC 669.131.2-196:620.178.16

SLABODINSKIY, I. N., SOFROSHENKOV, A. F., GOVOROV, A. A., and TIMONINA, L. G.
Siberian Metallurgical Institute

"Investigation of the Hydroabrasive Wear Resistance of Cr-Ni White Cast Irons"

Moscow, Izvestiya Uchebnykh Vysshikh Zavedeniy--Chernaya Metallurgiya, No 6, Jun 73, pp 101-103

Abstract: Alloys containing 17-18% Cr, 2-3.5% C and 2-6% Ni were melted in an acid induction furnace in order to study the hydroabrasive wear resistance of white cast irons in the cast and heat-treated conditions in relation to carbon and nickel content in the alloys. It was shown that increased nickel content has little effect on wear resistance, and heat treatment exerts little effect on cast iron durability. Industrial tests showed that the durability of cast wheels of pumps operating in the water of a hydraulic pit is three times higher than in series pumps. 2 figures, 2 tables, 1 bibliographic reference.

1/1

USSR S

SOFROSHENKOV, A. F., and TIMONINA, L. G.

"High-Temperature Nitriding of Aluminized Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1970, pp 138-140

Abstract: Experimental data are presented on the properties of aluminized layers nitrided at high temperature. In the case of high-temperature nitriding, the duration of the process is reduced. The diffusion layers obtained have hardness and wear resistance as high as those of 38KhMYuA nitrided steel. With an increase in the nitriding temperature, the depth of the diffusion layer is increased, but its hardness and wear resistance decrease. The effect of repeated heating on the structure and properties of the nitrided layers was studied, and the most efficient nitriding conditions were recommended.

Nitriding aluminized layers at t $>500^{\circ}$C permits a reduction in the nitriding time to 1-6 hours when obtaining a layer from 0.1 to 0.45 mm deep with the same properties as in the case of ordinary nitriding. Six hours of holding at 600-700°C is most efficient. Retaining a high surface hardness ($H_{\mu} \geq 900$) during repeated heating to 900-950°C permits use of these layers for products operating under high temperature conditions. It is pointed out that the high values of hardness with increased nitriding temperature arise from the formation of disperse aluminum

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USSR

SOFROSHENKOV, A. F., and TIMONINA, L. G., Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 7, 1970, pp 138-140

nitrides which are stable under these conditions. The decrease in wear resistance with an increase in nitriding temperature is connected with the dissociation of low-stability nitrides and the formation of aluminum nitrides in a less disperse form.

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--BEHAVIOR OF SPHERICAL POLYMER PARTICLES UNDER CONDITIONS OF STRAIN DEFORMATION -U-

AUTHOR-(04)-KARGIN, V.A., SOGOLOVA, T.I., SHAPOSHNIKOVA, T.K., TOPURIDZE, N.S.

COUNTRY OF INFO--USSR

5

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(4), 906-10

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--NATURAL RUBBER, BUTADIENE STYRENE RESIN, ELONGATION, MATERIAL DEFORMATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1685 STEP NO--UR/0459/70/012/004/0906/0910

CIRC ACCESSION NO--AP0125306

UNCLASSIFIED

2/2 027

UNCLASSIFIED

CIRC ACCESSION NO--AP0125306

PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ADDN. OF THE SPHERICAL DROPLETS OF NATURAL RUBBER LATEX OR BUTADIENE STYRENE COPOLYMER LATEX TO PARTIALLY EVAPD. SOLNS. OF THESE RUBBERS IN C SUB6 H SUB6, FOLLOWED BY EVAPN. GAVE MODELS OF FILMS CONSISTING OF AMORPHOUS PHASE AND LARGE (5-300 MU DIAM.) GLOBULES. THE OPTICAL MICROSCOPY OF THESE MODELS SUBJECTED TO ELONGATING STRESSES SHOWED THAT THE DEFORMATION OF THE GLOBULES (CONTINUOUS OR STEPWISE) DEPENDS ON THEIR NO., DISTRIBUTION, AND INTERACTIONS WITH THE AMORPHOUS PHASE. FACILITY: FIZ.-KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--FORMATION OF SUPRAMOLECULAR STRUCTURES IN FILMS OF CRYSTALLINE POLYMERS -U-

AUTHOR-(05)-KARGIN, V.A., SOGOLOVA, T.I., BELYY, V.A., MIRONOVICH, L.L., SAVKIN, V.G.

COUNTRY OF INFO--USSR

5

SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(3), 215-18

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--MOLECULAR STRUCTURE, CRYSTALLINE POLYMER, CAPROLACTAM, CRYSTALLIZATION, SPHERULITE, CRYSTAL STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1675 STEP NO--UR/0460/70/012/003/0215/0218

CIRC ACCESSION NO--AP0125296

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70
CIRC ACCESSION NO--AP0125296

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE NATURE OF SUPRAMOL. STRUCTURES IN CRYSTL. POLYCAPROLACTAM (I) DEPENDED ON THE PRESENCE OF HOMOGENEOUS AND HETEROGENEOUS NUCLEATION AGENTS IN I MELTS, THE RATIO OF WHICH WAS A FUNCTION OF CRYSTN. TIME AND CRYSTN. TEMP. HETEROGENEOUS CRYSTN. SITES WERE MORE HEAT RESISTANT THAN HOMOGENEOUS ONES. SPHERULITES FORMED ON HETEROGENEOUS CRYSTN. SITES HAD A MORE ORDERED CRYST. STRUCTURE.

UNCLASSIFIED

1/2 053 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--MODIFICATION OF THE SUPRAMOLECULAR STRUCTURE AND MECHANICAL BEHAVIOR OF POLYCAPROLACTAM BY PHYSICAL METHODS -U-

AUTHOR-(04)-KARGIN, V.A., SOGOLOVA, T.I., SHAPOSHNIKOVA, T.K., KORSHUNOVA, N.T.

COUNTRY OF INFO--USSR

S

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(3) 649-55

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, PHYSICS

TOPIC TAGS--MOLECULAR STRUCTURE, PLASTIC MECHANICAL PROPERTY, CAPROLACTAM, POLYMERIZATION, PLASTIC FABRICATION, MOLECULAR WEIGHT, POLYMER STRUCTURE, NUCLEATION, FILLER, POLYMER PHYSICAL PROPERTY, GRAPHITE, ALUMINUM OXIDE, KAOLIN, TALC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0298 STEP NO--UR/0459/70/012/003/0649/0655

CIRC ACCESSION NO--AP0111492

UNCLASSIFIED

2/2 053 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYS. PROPERTIES (IMPACT STRENGTH (I), HARDNESS (H), BENDING STRENGTH (B), RUB RESISTANCE (R)), OF POLYCAPROAMIDE (I), OBTAINED BY THE POLYMN. DIRECTLY IN THE MOLD WERE EFFECTIVELY REGULATED BY CHANGING THE TEMP. OF THE MOLDING MIXT. PREPN. THE MIXT. CONTAINED THE MONOMER, 0.3 MOLE PERCENT (ON MONOMER WT.) NA METAL, AND 0.3 MOLE PERCENT N,ACETYLCAPROLACTAM (POLYMN. ACTIVATOR) AND WAS PREPD. AT 110DEGREES-94DEGREES. THE MOLDING WAS CARRIED OUT 1.5 HR AT 180 PLUS OR MINUS 2DEGREES AND THE COOLING RATE WAS 2DEGREES-MIN. WHEN THE POLYMN. MIXT. WAS PREPD. AT 110-25DEGREES, I HAD HIGH I BUT LOW H AND B; 133-7DEGREES MIXT. PREPN. TEMPS. INCREASED H AND B, BUT DECREASED I; 185-97DEGREES MIXT. PREPN. TEMPS. INCREASED R CONSIDERABLY. THE MIXT. PREPN. TEMPS. NOT ONLY AFFECT THE MOL. WT. OF I, BUT ALSO ALTER ITS STRUCTURE. THE ADDN. TO THE POLYMN. MIXT. OF 0.5 WT. PERCENT POWD. PBO, AL SUB2 O SUB3, TIO SUB2, GRAPHITE, TALC, OR KAOLIN AS THE NUCLEATION CENTERS ALSO CHANGES I, H, B, AND R. THE USE OF ACTIVE SUPPORTS (TEFLON, GLASS, AL FOIL) AS THE MOLD LININGS ALSO MODIFIES THE STRUCTURE AND THE PHYS. PROPERTIES OF I.

UNCLASSIFIED

Acc. Nr.
AP0048835

Abstracting Service:
CHEMICAL ABST.

5-70

Ref. Code
UR0460

S

91082d **Polymeric colloidal systems analogous to soap solutions.** Sogolova, T. I.; Sapozhnikova, I. N. (USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(2), 104-5 (Russ). Addn. of EtOH to an NH_3-satd. aq. soln. of acrylic acid-maleic anhydride copolymer (I) (mol. wt. 0.9×10^6) gave an opalescent liq. which, like soap solns., did not sep. into layers on long standing. The turbid liq. became clear on heating, apparently due to melting of the colloidal particles. Cooling this soln. again gave a turbid liq. Electron microscopy showed that spherical and elongated particles of colloidal dimensions were present in the liq. The liq. was considered a polymeric analog of a soap soln. The colloidal properties of the system were apparently due to the supramol. structuring of I in soln.

DBJR

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REEL/FRAME
19800602

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USSR

UDC: 577.4

SOGOMONYAN, Ye. S.

"On the Problem of Constructing Minimum Tests"

Tr. IV Vses. soveshch. po avtomat. upr., 1968. Tekhn. sredstva avtomatiki (Works of the Fourth All-Union Conference on Automatic Control, 1968. Technical Means of Automation), Moscow, "Nauka", 1971, pp 72-81 (from RZh--Kibernetika, No 5, May 72, Abstract No 5V362)

Translation: The author considers a method of constructing minimum and minimized tests. The method is based on representing the initial expression which assigns the conditions for finding the tests in the form of a Boolean function. The paper describes an algorithm for finding tests in which shorter tests are found consecutively on each step. If the number of minimized tests of length l which exist for the investigated problem is determined on some step of the procedure, then conditions are proved under which tests of length $r < l$ or less do not exist. This means that on some stage of the test construction the algorithm can be terminated if the limit from below found for the tests satisfies the one solving the problem.

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USSR

SOGOMONYAN, Ye. S., Tr. IV Vses. soveshch. po avtomat. upr., 1968. Tekhn. sredstva avtomatiki, Moscow, "Nauka", 1971, pp 72-81 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V362)

A study was made of the question of the feasibility of breaking down the initial problem into mutually independent problems of lesser volume so that the initial problem (if it is lengthy) could be processed in parallel on a digital computer. The problem of finding out how close the resultant minimized tests are to the minimum is considered. Probabilistic estimates are found for the existence of minimum tests of length l, where l is the length of the resultant minimized tests, and expressions are found for calculating the probability that the resultant minimized tests are minimum. The proposed method can also be used for solving problems of minimizing Boolean functions and a number of other problems. Author's abstract.

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1/2 020

UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--INTRAMOLECULAR SALT BONDS IN SYNTHETIC POLYAMPHOLYTE; A COPOLYMER OF 2 METHYL 5 VINYLPYRIDINE AND METHACRYLIC ACID -U-

AUTHOR-(04)-KIPPER, A.I., OMITRENKO, L.V., PTITSYN, O.B., SOGOMONYANTS, ZH.S.

COUNTRY OF INFO--USSR

S

SOURCE--MOLEKULYARNAYA BIOLOGIYA, 1970, VOL 4, NR 2, PP 175-183

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPOLYMER, PYRIDINE, METHACRULIC ACID, POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRIC ANALYSIS, INTRAMOLECULAR MECHANICS, CHEMICAL BONDING, PROTEIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/1716 STEP NO--UR/0463/70/004/002/0175/0183

CIRC ACCESSION NO--AP0100313

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INVESTIGATION WAS CARRIES OUT OF ELECTROCHEMICAL AND CONFORMATIONAL PROPERTIES OF A WATER SOLUBLE COPOLYMER OF 2 METHYL 5 VINYLPYRIDINE AND METHACRYLIC ACID (50:50) BY POTENTIOMETRIC TITRATION, SPECTROPHOTOMETRIC TITRATION (FROM ULTRAVIOLET AND INFRARED SPECTRA) AND BY VISCOMETRY. IT WAS SHOWN THAT IN THE PH RANGE FROM SIMILAR 2 TO SIMILAR TO 7 AN INTRAMOLECULAR SALT BOND WAS FORMED OF THE TYPE NH PRIME PLUS COO WITHOUT COUNTER IONS FROM THE SOLUTION. ABOUT 30PERCENT OF GROUPS OF EACH TYPE WAS INVOLVED IN THE SALT BONDS. THE OCCURRENCE OF INTRAMOLECULAR FORCES OF ELECTROSTATIC ATTRACTION LEADS TO A MORE COMPACT CONFORMATION OF THE MACROMOLECULE AS COMPARED WITH THAT OF THE GAUSSIAN COILS. THE PROPERTIES AND BEHAVIOUR OF THE AMPHOLYTE PERMITS TO CONSIDER IT AS AN APPROXIMATED PROTEIN MODEL.

UNCLASSIFIED

USSR

UDC 669.28'295:620.17

3

VITORSKIY, Ya. M., GAL'CHINSKIY, F. K., KAVERINA, S. N., KUZNETSOVA, A. S., MAT'YASH, V. A., SOGRISHIN, Yu. P., and TKACHENKO, V. G., Institute of Metal Physics, Academy of Sciences UkrSSR

"Effects of the Rate and Temperature of Straining on the Structure and Properties of the Alloy Mo-0.5% Ti"

Moscow, Metallovedeniye, No 6, 1971, pp 50-53

Abstract: Effects of the rate and temperature of straining on the structure and properties of the molybdenum alloy Mo-0.5% Ti were investigated on specimens strained at speeds of 0.2, 5.0, and 20 m/sec on the K862S hot stamping press (630 tons), the M211 exhaust stamping hammer, and the IM-39 high-frequency unit, respectively. The investigation results demonstrate a high plasticity of the alloy Mo-0.5% Ti both in the recrystallized and strained conditions. A high-rate straining significantly increases the plasticity in the working process. Macrostructures of specimens upset at 600-1200°C at high and low speeds show deadlocks. Sectional hardness changes of specimens upset with 70% of strain by 900°C were by 0.2 m/sec strain rate HV 195-266 and by 20 m/sec strain rate HV 212-333. For an optimum strength and plasticity correlation, a cellular structure must be produced in the ingot with not less than 70% of strain at a temperature which is lower than the recrystallization temperature under conditions excluding a heat effect. Six figures, one table, six bibliographic references.

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USSR

SOIFER, V. N.

"Symposium on Molecular Mechanisms of Genetic Processes"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 70, pp 927-928

Abstract: The Symposium, held in Moscow from 1 to 5 June 1970, was organized by the Institute of General Genetics, Academy of Sciences USSR with the cooperation of the Institute of Virology imeni D. I. Ivanevski, the Institute of Epidemiology and Microbiology imeni N. F. Gemeleya of the Academy of Medical Sciences, and Moscow University. Some 260 persons from England, Bulgaria, the German Democratic Republic, Poland, the United States, France, and 17 cities of the Soviet Union participated. The latest achievements in the field of molecular genetics were reported and discussed on the first day. N. P. Dubinin discussed problems of the transfer of premutational lesions in mutations (e.g., the transfer of lesions from one strand of desoxyribonucleic acid to both strands and from one chromatid to both). A. N. Belozerskiy presented experimental data on the relationship between the nucleotide composition of DNA of various organisms. Z. Gradechna reported on a study of the transcription mechanism of DNA. R. Kh. Khesin discussed data obtained on the structure,

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USSR

SOIFER, V. N. Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 6, Nov/Dec 70, pp 927-928

function, and regulation of RNA-polymerase, one of the most important enzymes participating in genetic processes. The structure of ribosome and its role in the translational process was discussed by A. S. Spirin, at sessions on "Molecular Mechanisms of Mutagenesis," the effects of pleiotropy, suppression, the kinetics and chemistry of mutagenesis, and molecular mechanisms of mutagenesis in higher organisms were discussed. The decoding of genetic information in the cells of higher organism and problems of the ontogenesis of animal viruses were covered in detail. Recombination during conjugation of E. coli, the kinetics of the reparation and replication processes, and the effect of reparation systems on the frequency and character of the mutagenic process were also discussed.

Acc. Nr: AP0047251 Ref. Code: UR 0606

PRIMARY SOURCE: Urologiya i Nefrologiya, 1970, Nr 1,
pp 56-59

S

THE RESISTANCE OF GONOCOCCI TO PENICILLIN

A. M. Golosovker, K. K. Soing, Kh. A. Alimov, S. A. Mezhlumov

Summary

The authors studied the resistance of 52 strains of gonococci obtained from 44 patients suffering from various forms of gonorrhea. The highest resistance (to 1 to 2 Units of penicillin per 1 ml of the medium) was noted in the strains of gonococci isolated from the patients suffering from chronic gonorrheal urethritis, refractory to penicillin therapy.

Penicillin resistance of gonococci in 5 patients who failed to be cured with bicillin-6 (total dose 1,200,000 Units) proved to be from 2 to 10 times greater than before administration of bicillin.

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REEL/FRAME
19790758

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1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--FIELD DEPENDENCE OF THE CONCENTRATION OF CARRIERS IN GERMANIUM
UNDER INTRINSIC PHOTOEXCITATION CONDITIONS -U-
AUTHOR-(04)-GERSHENZON, YE.M., GUSINSKIY, E.N., RABINOVICH, R.I., SOINA,
N.V.

5

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(4), 969-74

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--GERMANIUM, ELECTRON, PHOTOEFFECT, LIGHT EXCITATION, CYCLOTRON
RESONANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0350 STEP NO--UR/0181/70/012/004/0969/0974

CIRC ACCESSION NO--AP0126106
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0126106

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE GIVEN AND DISCUSSED OF THE MEASUREMENTS OF THE FIELD DEPENDENCE OF CONCN. OF HOT ELECTRONS AND HOLES IN PURE GE AT 4.2DEGREESK. THE MEASUREMENTS WERE CARRIED OUT BY THE METHOD OF CYCLOTRON RESONANCE, WHICH ALLOWS ONE TO STUDY THE SEP. FIELD DEPENDENCES OF THE CONCN. OF ELECTRONS AND HOLES. THE CARRIER CONCN. NECESSARY FOR THE MEASUREMENTS WAS CREATED BY LIGHT WITH WAVELENGTHS LAMBDA IS LARGER THAN OR EQUAL TO 1.65 MU (VOL. EXCITATION) AND LAMBDA EQUALS 0.8 MU (SURFACE EXCITATION). THE CONCN. OF ELECTRONS IS INDEPENDENT OF THE ABSORBED MICROWAVE POWER IN THE SURFACE AS WELL AS VOL. EXCITATION. THE CONCN. OF HOLES IS INDEPENDENT OF THE POWER IN THE SURFACE EXCITATION AND INCREASES CONSIDERABLY WITH THE POWER IN THE VOL. EXCITATION. DEPENDENCES OBSD. IN THE VOL. EXCITATION CAN BE EXPLAINED BY ASSUMING THAT RECOMBINATION OF CARRIERS TAKES PLACE ON THE DEEP LYING IMPURITIES. THE ENERGY DEPENDENCE OF THE COEFF. OF CAPTURE OF HOLES ON DEEP CENTERS EXHIBITS CORRESPONDENCE WITH THE LAX THEORY FOR H LIKE IMPURITIES.

FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--EFFECT OF THE CAPTURE MECHANISM ON THE CYCLOTRON RESONANCE LINE
SHAPE OF HOT CARRIERS -U-

AUTHOR-(04)-GERSHENZON, YE.M., GUSINSKIY, E.N., RABINOVICH, R.I., SOINA,
N.V.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(3), 739-44

DATE PUBLISHED---------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--CYCLOTRON RESONANCE, THERMAL EFFECT, CARRIER DENSITY, LINE
WIDTH, ACOUSTIC SCATTERING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/1986

STEP NO--UR/0181/70/012/003/0739/0744

CIRC ACCESSION NO--AP0105060

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0105060 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LINE SHAPE WAS STUDIED OF CYCLOTRON RESONANCE OF HOT CARRIERS UNDER CONDITIONS WHEN THEIR CONCN. VARIES ON HEATING. CASES WERE ANALYZED OF CONST. AND VARIABLE (WITH HEATING) CONCNS. OF RECOMBINATION CENTERS. THE ENERGY DEPENDENCE OF THE CAPTURE COEFF. ALPHA(EPSILON) CONSIDERABLY AFFECTS THE SHAPE OF THE CYCLOTRON RESONANCE LINE AND THE DEPENDENCE OF ITS HALFWIDTH ON THE POWER. EXPRESSIONS ARE OBTAINED FOR THE SHAPE OF THE CYCLOTRON RESONANCE LINE UNDER THE CONDITIONS OF ACOUSTICAL SCATTERING AND ALPHA(EPSILON) VARIES DIRECTLY AS EPSILON PRIME K NEGATIVE. IN THIS CASE, THE DEPENDENCE OF THE HALFWIDTH OF THE LINE ON THE POWER IS THE SAME AS AT CONST. CONCN. OF CARRIERS. DATA ARE GIVEN FROM EXPTS. ON HEATING OF HOLES IN PURE GE WHEN THEIR CONCN. CHANGES WITH THE POWER.

FACILITY: MOSK. GOS. PEDAGOG. INST. IM. LENINA, MOSCOW, USSR.

UNCLASSIFIED

USSR

LASKORIN, B. N., YAKSHIN, V. V., BUCHIKHIN, Ye. P., SOKAL'SKAYA, ~~L. I., and~~ MEDVEDEV, V. I., Institute of Geophysics imeni O. Yu. Shmidt, Academy of Sciences USSR, Moscow

UDC 547.241:541.65 1

"The Donor Capacity of Neutral Organophosphorus Compounds of the Type $X_3P=0$"

Kiev, Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 2, Mar-Apr 73, pp 245-250

Abstract: The donor capacity in complex-formation of neutral organophosphorus compounds of the type $X_3P=0$ (esters, ester amides and amides of P-acids) was studied on the basis of the basicity constants pK_a determined by potentiometric titration with $HClO_4$ in nitromethane, the displacement $\Delta\nu_{OH}$ of the frequency of valency vibrations in IR spectra of complexes with phenol and the enthalpy of formation of these complexes, the displacement of the absorption band by iodine $\Delta\lambda_{max}$ upon formation of complexes with iodine in CCl_4, and the stability constants $\tilde{K}_{HNO_3}$ of complexes

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USSR

LASKORIN, B. N., et al., Teoreticheskaya i Eksperimental'naya Khimiya, Vol 9, No 2, Mar-Apr 73, pp 245-250

with HNO_3. The compounds studied, which included $R_3P{=}O$, $R_2P(O)OR'$, $RP(O)(OR')_2$, $(R'O)_3P{=}O$, $R_2P(O)NHR'$, $RO(O)(NHR')_2$, $(R'NH)_3P{=}O$, $(RO)_2P(O)NHR'$, and $ROP(O)(NHR')_2$, where R, R' were normal alkyls C_4-C_{10}, were obtained by reacting P acid chlorides with alcohols and amines. The introduction of alkylamide groups increased the donor capacity of the phosphoryl group as a result of the $p\pi - d\pi$ conjugation of the unshared electron pair of N with the vacant 3d - orbitals of P. The magnitude of this interaction was not constant, but varied with the symmetry type of the molecule, the effective positive charge at P, and the competing mesomeric capacity of the substituents at P and their volumes.

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USSR

YAKSHIN, V. V., and SOKAL'SKAYA, L. I. UDC 547.26'118

"Reaction of Trialkylphosphites With Thiocarboxylic Acid Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb 71, p 434

Abstract: Reaction of trialkylphosphites with thiocarboxylic acid chlorides follows the Arbuzov mechanism, yielding thioketophosphonates. Adding equimolar quantities of trimethyl phosphite to a pentane solution of thiobenzoyl chloride at -5° in an argon atmosphere gave an 85% yield of dimethyl thiobenzoylphosphonate, a reddish-purple liquid, b.p. $101-103^\circ/0.01$ mm, n_D^{20} 1.5561, d_4^{20} 1.2732.

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USSR

YAKSHIN, V. V., and SOKAL'SKAYA, L. I. UDC 547.241'248:543.422.4'6

"Reaction of Trialkylphosphines With Acyl Chlorides"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 2, Feb 73, p 440

Abstract: Equimolar quantities of the reagents were mixed in hexane at 0° under dry argon. The products, $[R_3P^+{-}C(O)R']X^-$, acetophosphonium salts are hygroscopic materials, insoluble in hexane, ether or ethyl acetate, decomposing gradually in chloroform, methanol, acetonitrile and acetic acid. They can be stored for long periods in dry, anhydrous medium.

1/1

USSR

UDC: 547.241'284:543.422.4'6

LASKORIN, B. N., YAKSHIN, V. V., SOKAL'SKAYA, L. I.

"Synthesis and Spectral Properties of Organophosphorus Compounds Containing a Keto Group"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 6, Jun 72, pp 1261-1269

Abstract: A series of compounds of the general formula $R_2P(O)(CH_2)_nC(O)R'$ ($R = CH_3$, CH_3O; $n = 0, 1, 2$; $R' = CH_3$, C_6H_5, substituted methyl) were synthesized as a basis for studying the electron interaction of the tetracoordinated phosphorus atom with the carbonyl group. The effect of the higher atomic orbitals of phosphorus on the physical and chemical properties of the synthesized compounds was studied. The influence of the overall induction effect of the substituents associated with the phosphorus atom on the degree of conjugation between the carbonyl group and the tetrahedral phosphorus atom was determined.

1/1

USSR

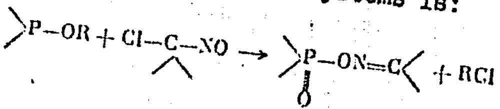
MALEKIN, S. I., YAKUTIN, V. I., SOKALSKIY, M. A., KRUGLYAK, YU. L., and MARTYNOV, I. V.

UDC 547.21'118

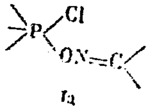
"Information on the Mechanism of the Reaction of α-Chloronitrosoalkanes With Trivalent Phosphorous Compounds"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 807-811

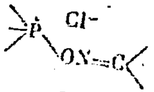
Abstract: The general reaction for these systems is:



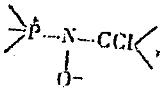
The intermediate (II) may be obtained via two pathways: either through a species containing a five-coordinate neutral P(Ia) or through one containing a four-coordinate positive P(Ib). Examination of IR spectra in the



Ia



Iб

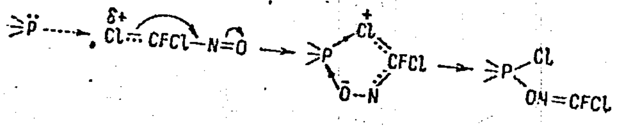


II

USSR

MALEKIN, S. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 4, 1972, pp 807-811

region of C=N and N=O vibrations and of the NMR spectra of P^{31} and F^{19}, the pathway through Ia was confirmed. Thus the nucleophilic attack by the trivalent phosphorous on the positively charged chlorine atom of the dichlorofluoronitrosomethane probably occurs with a cooperative transfer of an electron to the oxygen of the nitrosyl group breaking the Cl-C bond as shown below:



2/2

USSR

2

UDC 547.26'118+547.279.1

TEVELEV, G. Kh., GRINSHTEYN, Ye. I., KOFMAN, L. P., SOKAL'SKIY, M. A.,
AGUREYEV, V. G., and SINITSYNA, N. T.

"Addition of S-β-Mercaptoethyl 0,0'-Dialkyl Dithiophosphates to Substituted Olefins"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 308-314

Abstract: It is shown that S-β-mercaptoethyl 0,0'-dialkyl dithiophosphates add to esters of maleic, acrylic and methacrylic acids as well as to substituted amides of acrylic acid in the presence of catalysts -- salts of transition metals -- with formation of the corresponding substituted S-β-alkylmercaptoethyl 0,0'-dialkyl dithiophosphates. Analysis shows that the addition reaction takes place contrary to Markovnikov's rule, with the formation of products which are unbranched in the S-β-alkyl radical.

1/1

USSR

MALEKIN, S. I., SOKAL'SKIY, M. A., KRUGLYAK, Yu. L., and MARTYNOV, I. V. UDC 547.21'11

"Phosphorylated Oximes. X. Reaction of 2-Alkoxy-1,3,2-azaoxaphospholans With α-Chloronitrosoalkanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 302-305

Abstract: Dichlorofluoronitrosomethane reacts with 2-alkoxy-1-methyl-1,3,2-azaoxaphospholans in an Allen type reaction. Depending on the structure of the initial phospholan, the carbon-oxygen bond in the alkoxyl radical is broken, or the bond is broken in the azaoxaphospholan ring. Analysis of the general pattern of the reaction shows that the carbon-oxygen bond in the alkoxyl radical breaks with increasing ease as the number of atoms of carbon in the radical decreases. Since there is only a slight difference in the reactivity of the carbon-oxygen bonds in the alkoxyl radical and the azaoxaphospholan ring, both types of reactions take place simultaneously in some instances.

1/1

USSR

DROZD, G. I., SOKAL'SKIY, M. A., STRUKOV, O. G., and IVIN, S. Z. UDC: 546.185

"Aminohalofluorophosphorans"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2396-2410

Abstract: The authors investigated the structure, thermal stability and chemical properties of the adducts $R_2NPF_2 \cdot Hlg_2$, $(R_2N)_2 \cdot PF \cdot Hlg_2$ and $R(R_2'N)PF \cdot Hlg_2$ (where Hlg = Cl, Br). These compounds are produced by interacting the corresponding fluorides of trivalent phosphorus with chlorine or bromine. In addition, the first two adducts were produced by chlorine treatment of thion derivatives $R_2NP(S)F_2$ and $R(R_2N)P(S)F$ respectively. In many instances, the resultant compounds are resistant to vacuum distillation. NMR and IR spectra indicate a pentacoordination structure (with trigonal-bipyramidal configuration of the molecules) for type $R_2NPF_2 \cdot Hlg_2$ adducts. Spectral data for the other two types of adducts are explained more satisfactorily by an ionic structure

$$[>PFHlg]^{+}Hlg^{-}.$$

The chlorine or bromine atoms in these compounds may be replaced by fluorine, or by dialkylamino- monoalkylamino- and S-alkyl groups with formation of the

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DROZD, G. I., et al., Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2396-2410

corresponding fluorophosphorans. Interaction of the adducts with H_2O, carboxylic acid anhydrides and ethylene oxide produces the corresponding fluorides of tetravalent phosphorus.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ADDUCTS OF FLUOROPHOSPHINES WITH HALOGENS -U-

AUTHOR-(02)-DROZD, G.I., SOKALSKIY, M.A.

COUNTRY OF INFO--USSR

S

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 701-2

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--NMR SPECTRUM, ORGANIC PHOSPHORUS COMPOUND, FLUORINE ISOTOPE, CHLORINE, FLUORINATED ORGANIC COMPOUND, LIGAND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0886 STEP NO--UR/0079/70/040/003/0701/0702

CIRC ACCESSION NO--AP0124549

UNCLASSIFIED

CIRC ACCESSION NO--AP0124549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA WERE USED TO SHOW THAT THE PRIMARY REACTION PRODUCT OF MEPF SUB2 WITH CL IS THE 1:1 ADDUCT, AS IS THE CASE WITH BR AND MEPF SUB2, AND PHPF SUB2 WITH CL AND BR AS WELL. THE NMR SIGNALS CONFIRMED THE PENTACOVALENT STRUCTURE OF THE ADDUCTS WITH TRIGONAL BIPYRAMID GEOMETRY. THE ADDUCTS ARE THERMALLY UNSTABLE AND EVEN AT LESS THAN ODEGREES TEND TO EXCHANGE LIGANDS TO FORM RPF SUB4 AND CRYST. SOLIDS SUCH AS RPX SUB3 F. WHEN THE PRIMARY ADDUCTS ARE HEATED TO 100-200DEGREES A MORE EXTENSIVE DESTRUCTION TAKES PLACE AND HALIDES O P(III) ARE FOUND AMONG THE PRODUCTS. FOLLOWING THE CHANGES IN MEPF SUB2.CLS UB2 BY LOW TEMP. PRIME19 F NMR REVEALED THE FORMATION OF UNSTABLE MEPF SUB3 CL, WHICH WAS CHARACTERIZED THEREBY; AFTER THE SIGNALS FROM THIS DECLINED, THE SIGNALS FROM MEPF SUB4 INCREASED IN INTENSITY, CONFIRMING THE CONVERSION SHOWN ABOVE.

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--DIHALOFLUOROPHOSPHORANES CONTAINING RO GROUPS -U-

AUTHOR-(03)-DROZD, G.I., SOKALSKIY, M.A., IVIN, S.Z.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 502

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, FLUORINATED ORGANIC COMPOUND, NMR SPECTRUM, GLYCOL, ESTER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1466 STEP NO--UR/0079/70/040/002/0502/0502

CIRC ACCESSION NO--AP0116903
UNCLASSIFIED

2/2 020
CIRC ACCESSION NO--AP0116903 UNCLASSIFIED PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF ROPF SUB2 WITH CL OR BR IN FORMING THE PRODUCTS OF THE ARBUZOV REACTION FORMED INITIALLY UNSTABLE ALKOXY (OR ARYLOXY)DIHALODIFLUOROPHOSPHORANES WHICH WERE DETECTED BY NMR SPECTRA TAKEN AT LOW TEMP. THUS WERE DETECTED AND CHARACTERIZED IN TERMS OF CHEM. SHIFTS, PRODUCTS SUCH AS MEOPF SUB2 CL SUB2, PHOPF SUB2 CL SUB2 AND PHOPF SUB2 BR SUB2. THE PENTACOVALENT NATURE OF THESE WAS CONFIRMED BY THE POS. VALUES OF CHEM. SHIFTS (RELATIVE TO H SUB3 PO SUB4) AND SMALL VALUES OF COUPLING CONSTS. J SUBPF MAKING THE AXIAL POSITION OF F ATOMS LIKELY IN TRIGONAL BIPYRAMID STRUCTURES. THE ADDUCTS OF HALOGENS TO (RO) SUB2 PF WERE EVEN LESS STABLE, BUT NMR SPECTRA OF THEM WERE ALSO OBTAINED IF THEY FORMED CYCLIC PHOSPHOLANE RINGS, THESE WERE CHARACTERIZED FOR ESTERS OF ETHYLENE AND PROPYLENE GLYCOLS AND CATECHOL, WITH CL AND BR ADDED.

UNCLASSIFIED

USSR

DROZD, G. I., et al., Zhurnal Obshchey Khimii, Vol 40, No 2, Feb 70, p 502

ative to H_3PO_4), J_{P-F} 1025 cycles/sec. The pentacovalent structure of the compounds is confirmed by the positive values of the chemical shifts δ_P and the comparatively small values of the constants J_{P-F}.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--HYDROSTATIC EFFECT IN A BINARY SOLUTION NEAR THE CRITICAL SOLUTION
POINT -U-
AUTHOR-(02)-BLAGOY, YU.P., SOKHAN, V.I.

COUNTRY OF INFO--USSR

SOURCE--PIS'MA ZH. EKSP. TEOR. FIZ. 1970, 11(6), 291-5

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--METHANE, FLUORINATED HYDROCARBON, CRITICAL POINT, HYDROSTATICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1995/1252 STEP NO--UR/0386/70/011/006/0291/0295

CIRC ACCESSION NO--AP0115714
UNCLASSIFIED

2/2 020
CIRC ACCESSION NO--AP0115714 UNCLASSIFIED PROCESSING DATE--23OCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SHADOW METHOD (S. ABRUKOV, 1962)
WAS USED TO STUDY THE CONCN. DISTRIBUTION IN THE BINARY SOLN. CH
SUB4-CF SUB4 WHICH HAS AN UPPER CRIT. POINT OF MIXING AT T SUBC
94.72DEGREES K AND 43.5PERCENT CF SUB4. THE MAX. CONCN. GRADIENT IS
FOUND AT THE LIQ. SURFACE AND IT DECREASES SHARPLY AS THE DISTANCE FROM
THE SURFACE IS INCREASED. THE CONCN. DISTRIBUTIONS OBTAINED BELOW T
SUBC ARE DUE TO THE EFFECT OF THE GRAVITATIONAL FIELD AND ARE
HYDROSTATIC EFFECT (A. V. VORONEL AND M. SH. GITERMAN, 1965).
FACILITY: FIZ. TEKH. INST. NIZK. TEMP., KHARKOV, USSR.

UNCLASSIFIED

USSR

UDC 577.1:612.12.015

SOKHIN, A. A.

"Concerning the Biological Role of Antibodies and Certain Mechanisms in the Regulation of Their Synthesis. (Survey of the Literature)"

Zh. mikrobiol. epidemiol. i immunobiol. (Journal of Microbiological Epidemiology and Immunobiology), No 12, 1972, pp 57-64 (from RZh-Biologicheskaya khimiya, No 12, Jun 73, Abstract No 12 F 1667)

Translation: Data in the literature concerning mechanisms in the recognition of antigens and systems for the production of antibodies and its internal regulation were systematized and critically analyzed. Facts are cited on the participation of antibodies in various phases of the body's immune response to the introduction of alien substances. The role of complexes of antigens and antibodies in the induction of the synthesis of immunoglobulins and tolerance.

1/1

USSR

UDC 577.1:612.12.015

SOKHIN, A. A.

"Concerning the Biological Role of Antibodies and Certain Mechanisms in the Regulation of Their Synthesis. (Survey of the Literature)"

Zh. mikrobiol. epidemiol. i immunobiol. (Journal of Microbiological Epidemiology and Immunobiology), No 12, 1972, pp 57-64 (from RZh-Biologicheskaya khimiya, No 12, Jun 73, Abstract No 12 F 1667)

Translation: Data in the literature concerning mechanisms in the recognition of antigens and systems for the production of antibodies and its internal regulation were systematized and critically analyzed. Facts are cited on the participation of antibodies in various phases of the body's immune response to the introduction of alien substances. The role of complexes of antigens and antibodies in the induction of the synthesis of immunoglobulins and tolerance.

1/1

USSR

UDC 616.988.75(A-2)-092:612.118.221.2

FROLOV, V. K., SOKHIN, A. A., SOTNIK, A. Ya., and MOROZOVA, L. I., Donetskaya Oblast Epidemiological Station, Medical Institute, and Donetskaya Oblast Blood Transfusion Station, Donetsk

"A2 (Hong Kong) Influenza and the ABO and Rh Blood Groups"

Moscow, Voprosy Virusologii, No 6, 1972, pp 701-703

Abstract: A correlation was noted between ABO blood group and susceptibility to influenza among 2,289 patients with clinically diagnosed influenza and acute respiratory disease during the Jan/Mar 1970 A2 (Hong Kong) influenza epidemic in Donestskaya Oblast. Patients with blood groups O and AB were more susceptible to influenza than type A and B patients. A similar correlation was seen among 1,167 patients with serologically diagnosed influenza and among 72 influenza fatalities. Distribution of Rh factor was identical for patients and healthy individuals. Reasons for such correlation remain unknown.

1/1

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--LUBRICATING COOLING LIQUID FOR COLD WORKING OF METALS -U-

AUTHOR-(05)-NIKITIN, YU.I., SKRIPKO, G.F., SOKHIN, S.M., POGORELYY, B.V.,
KOMOLAYEVA, L.V.
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 263,799
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CHEMICAL PATENT, METALWORKING LUBRICANT, COLD WORKING,
CHEMICAL COMPOSITION, BORATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/0844 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0131437
UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AA0131437

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A LUBRICATING COOLING LIQ. HAS THE FOLLOWING COMPN.: CALCD. SODA 0.1-0.8, H SUB2 O SOL. CELLULOSE ESTER SALT 0.03-0.3, NH SUB4 CL 0.05-0.1, NA TETRABORATE 0.2-0.5, NANO SUB3 0.1-0.3, PARAFFIN OIL 0.1-0.5, AND H SUB2 O 97.5-99.42PERCENT. FACILITY: UKRAINIAN SCIENTIFIC RESEARCH INSTITUTE OF INSTRUMENTS AND SYNTHETIC EXTRAHARD MATERIALS.

UNCLASSIFIED

Inorganic Compounds

USSR UDC 539.89 + 548.73

FEL'DGUN, L. I., NIKITINA, T. P., SOKHOR, M. I., and FUTERGENDLER, S. I.,
All-Union Scientific Research Institute of Abrasives and Grinding, Leningrad

"Mechanism of Modification Conversion in Boron Nitride"

Moscow, Zhurnal Fizicheskoy Khimii, Vol 45, Vyp 12, 1971, pp 3067-3070

Abstract: Cubic boron nitride was synthesized from pyrolytic hexagonal boron nitride and its structure was studied with x-ray diffraction in order to examine the phase conversion mechanism of the hexagonal boron into the cubic form. The synthesis was carried out in a high-pressure chamber loaded with powdered and pyrolytic hexagonal boron nitride. The rate of conversion of powdered hexagonal boron nitride with a three-dimensional lattice was much higher than that of pyrolytic hexagonal boron nitride. It was attributed to a high density of pyrolytic nitride which retarded the flow of the melt between the particles and the solution of hexagonal nitride particles in the melt. The product contained dark and light colored boron nitride crystals with cubic structure. The appearance of the dark-colored crystals was due either to the presence of metal impurities, or to penetration of boron into the crystal lattice of cubic boron nitride. The crystal lattice parameters of the cubic boron nitride varied from α = 3,6157 Å for colorless crystals

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USSR

FEL'DGUN, L. I., et al., Zhurnal Fizicheskoy Khimii, Vol 45, Vyp 12, 1971, pp 3067-3070

to $\alpha = 3{,}6181$ Å for dark-colored crystals. The size of the nitride crystals was from $\sim 10^{-3}$ to 10^{-2} cm. It is concluded that there was no direct conversion of the hexagonal boron nitride into a cubic structure, but the latter was crystallized from the melt due to the presence of unordered B - N complexes in it.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--NONLINEAR OROGRAPHIC WAVES IN THE ATMOSPHERE -U-

AUTHOR--SOKHOV, T.Z.

COUNTRY OF INFO--USSR S

SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK SSSR, FIZIKA ATMOSFERY I OKEANA,
VOL VI, NO 2, 1970, PP 115-126
DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MOUNTAIN, AIR FLOW, ATMOSPHERIC MOVEMENT, OROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1991/0742 STEP NO--UR/0362/70/006/002/0115/0126

CIRC ACCESSION NO--AP0110466
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--16OCT70
CIRC ACCESSION NO--AP0110466
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THIS PAPER GIVES THE RESULTS OF A STUDY OF THE NONLINEAR TWO DIMENSIONAL PROBLEM OF A FLOW OF COLD AIR AROUND A MOUNTAIN RANGE. THE PROBLEM ITSELF WAS FORMULATED EARLIER: T. Z. SOKHOV, ET AL., "APPLICATION OF THE LONG WAVES METHOD IN THE NONLINEAR PROBLEM OF MOTION OF A COLD AIR MASS OVER A RANTE," IZV. AN SSSR, FIZIKA ATMOSFERY I OKEANA, 4, NO 1, 1968. SINCE THEN SOKHOV HAS DERIVED EXPRESSIONS RELATING THE INTERDEPENDENCE OF THE METEOROLOGICAL PARAMETERS WHICH DETERMINE THE CONDITIONS FOR EXISTENCE OF LONG WAVES BEYOND A RANGE. THE AUTHOR DISCUSSES THE EFFECT OF THE TEMPERATURE JUMP AT THE DISCONTINUITY, THICKNESS AND VELOCITY OF THE ONCOMING FLOW, ELEVATION AND WIDTH OF THE BASE OF A SINGLE RIDGE ON THE AMPLITUDE AND LENGTH OF LEE WAVES. THE PATTERN OF FLOW IS ILLUSTRATED AND ANALYZED.

FACILITY: COMPUTATION CENTER, SIBERIAN DEPARTMENT ACADEMY OF SCIENCES USSR.

UNCLASSIFIED

1/2 030 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--NONLINEAR OROGRAPHIC WAVES IN THE ATMOSPHERE -U-

AUTHOR--SOKHOV, T.Z.

S

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, IZVESTIIA, FIZIKA ATMOSFERY I OKEANA, VOL 6
FEB. 1970, P 115-126

DATE PUBLISHED-------70

SUBJECT AREAS--ATMOSPHERIC SCIENCES

TOPIC TAGS--AIR FLOW, AIR MASS, STEADY FLOW, TEMPERATURE, WAVE AMPLITUDE,
WAVELENGTH, TOPOGRAPHY, OROGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1907 STEP NO--UR/0362/70/006/000/0115/0126

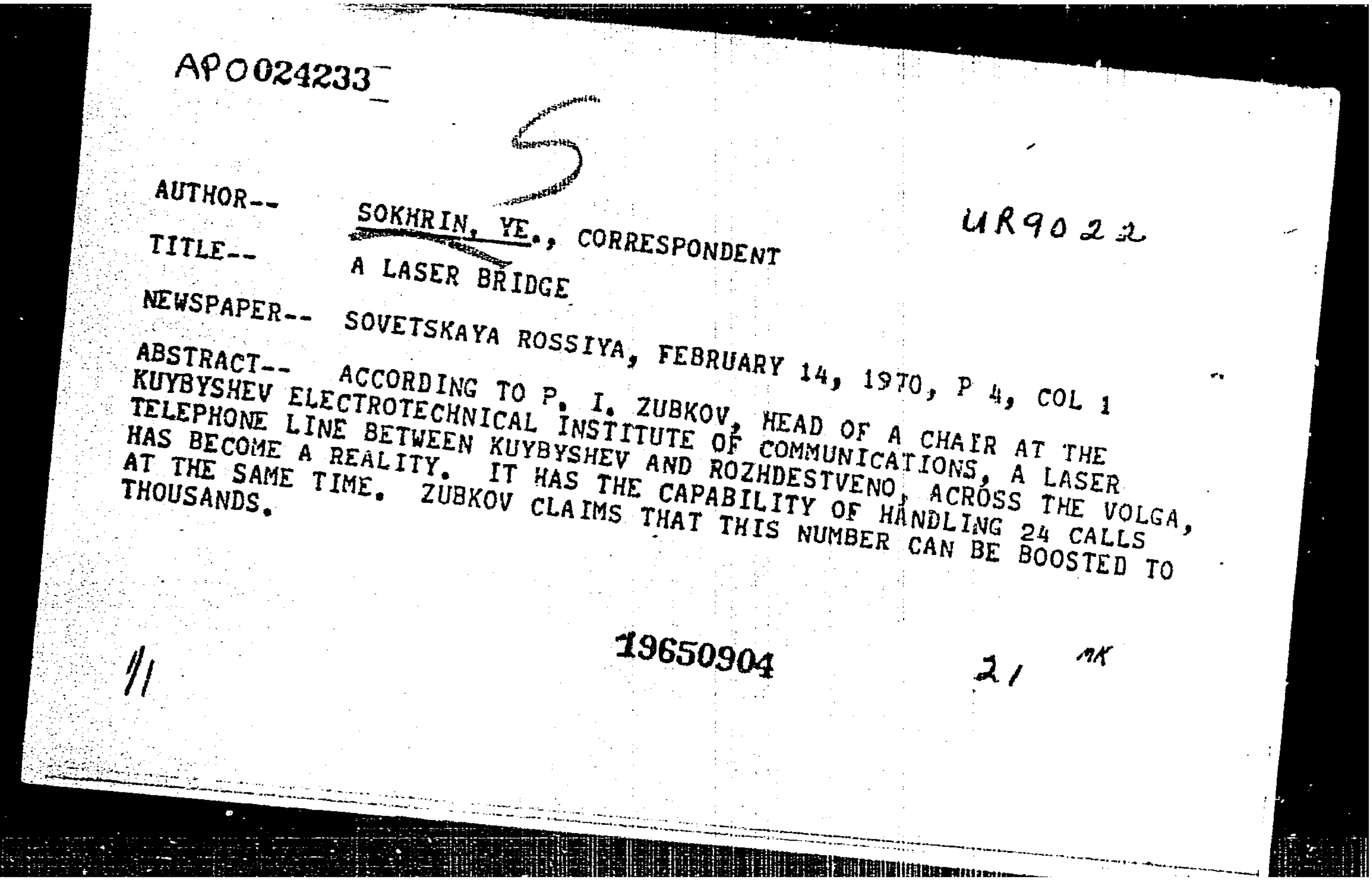
CIRC ACCESSION NO--AP0108237

UNCLASSIFIED

2/2 030
CIRC ACCESSION NO--AP0108237 UNCLASSIFIED
PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS OF A STUDY OF A NONLINEAR TWO DIMENSIONAL STEADY PROBLEM CONCERNING A FLOW OF COLD AIR OVER A RIDGE. THE RELATIONS BETWEEN THE METEOROLOGICAL PARAMETERS WHICH DETERMINE THE CONDITIONS OF EXISTENCE OF LONG WAVES BEHIND THE RIDGE ARE OBTAINED. THE EFFECT OF A TEMPERATURE JUMP AT THE INTERFACE, THE THICKNESS AND SPEED OF THE INCIDENT FLOW, AND THE HEIGHT OF THE RIDGE AND THE WIDTH OF ITS BASE ON THE AMPLITUDE AND LENTH OF THE LEE WAVES IS DISCUSSED. COMPUTER PRODUCED FLOW PATTERNS ARE PRESENTED.

UNCLASSIFIED



AP0024233

5

UR9022

AUTHOR-- SOKHRIN, YE., CORRESPONDENT

TITLE-- A LASER BRIDGE

NEWSPAPER-- SOVETSKAYA ROSSIYA, FEBRUARY 14, 1970, P 4, COL 1

ABSTRACT-- ACCORDING TO P. I. ZUBKOV, HEAD OF A CHAIR AT THE KUYBYSHEV ELECTROTECHNICAL INSTITUTE OF COMMUNICATIONS, A LASER TELEPHONE LINE BETWEEN KUYBYSHEV AND ROZHDESTVENO, ACROSS THE VOLGA, HAS BECOME A REALITY. IT HAS THE CAPABILITY OF HANDLING 24 CALLS AT THE SAME TIME. ZUBKOV CLAIMS THAT THIS NUMBER CAN BE BOOSTED TO THOUSANDS.

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19650904

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USSR

UDC 51

SOKIRYANSKAYA, Ye. N.

"Calculation of Norms of Certain Linear Operators Using Integer Programming"

Sb. tr. In-t mat. Sib. otd. AN SSSR (Collection of Works. Institute of Mathematics of the Siberian Department of the Academy of Sciences USSR), 1971, No 4(21), pp 115-151 (from RZh-Matematika, No 11, Nov 72, Abstract No 11V425)

Translation: Let $n = \{1, 2, \ldots, \nu\}$, $x[N]$ be ν-dimensional vectors, $M = \{1, 2, \ldots, \mu\}$, $y[M]$ and $z[M]$ be μ-dimensional vectors; $X = \{x[N]\}$, $Y = \{y[M]\}$, $Z = \{z[M]\}$, $T = \{t[N]\}$ be finite-dimensional Banach spaces, such that $Y = Z^{*}$, $T = X^{*}$; A is a nonzero linear operator taking X into Z with the corresponding matrix $\alpha[M, N]$; $A^{*} \in Y \to T$ is a conjugate linear operator. The transfored matrix $a^{*}[N, M]$ corresponds to it. Unit spheres of the spaces X and Y are denoted by $\overline{X}$ and $\overline{Y}$, respectively.

The basic problem considers the problem of finding the norm of the operator A. Several forms of writing the norm are given.

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USSR

UDC: 51

SOKIRYANSKAYA, Ye. N.

"Calculation of Norms of Certain Linear Operators Using Integer Programming"

Sb. Tr. In-t Mat. Sib. Otd. AN SSSR [Collected Works of Mathematics Institute, Siberian Affiliate, Academy of Sciences, USSR], 1971, No 4(21), pp 115-141 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V425, by Yu. Finkel'shteyn)

Translation: Suppose $N=\{1, 2, \ldots, \nu\}$, $x[N]$, $t[N]$ are ν-dimensional vectors, $M=\{1, 2, \ldots, \mu\}$, $y[M]$, $z[M]$ are μ-dimensional vectors; $X=\{x[N]\}$, $Y=\{y[M]\}$, $Z=\{z[M]\}$, $T=\{t[N]\}$ are finite-dimensional Banach spaces, where $Y=Z^*$, $T=X^*$; A is a nonzero linear operator transforming X to Z with the corresponding matrix $a[M, N]$; $A^* \in Y \to T$ is a congugate linear operator. It corresponds to the transposed matrix $a^*[N, M]$. $\overline{X}$ and $\overline{Y}$ represent the unit spheres in spaces X and Y respectively.

The primary problem studied is the task of seeking the norm of operator A. Several forms of writing this problem are presented, including:

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USSR

Sokiryanskaya, Ye. N., Sb. Tr. In-t Mat. Sib. Otd. AN SSSR, 1971, No 4(21), pp 115-141

Problem III. $G(x, y) \equiv (Ax, y) \equiv y[M] \times a[M \times N] \times x(N) \rightarrow \max$, $(x, y) \in \overline{X} \times \overline{Y}$. All varieties of the main problem are multiple-extreme problems. A detailed study of their properties is presented, and, based on this study, an algorithm is suggested for solution of problem III. In the second portion of this algorithm, the method of branches and bounds is used, including a plan for one-sided branching suggested earlier by I. V. Romanovskiy (RZhMat, 1970, 11V404) for realization of the additive algorithm of Balash (RZhMat, 1966, 4V140).

1/2 036 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INTERCRYSTALLITE CORROSION TENDENCIES OF TWO PHASE STEEL 1KH18N2AG5
-U-

AUTHOR-(02)-ODESSKIY, D.A., SOKOL, I.YA.

COUNTRY OF INFO--USSR

SOURCE--KHIM. NEFT. MASHINOSTR. 1970, (2), 21-2

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--INTERGRANULAR CORROSION, STAINLESS STEEL, COLD ROLLING, SHEET METAL, ALLOY DESIGNATION, NITROGEN CONTAINING STEEL, AUSTENITIC STEEL, PLASTIC DEFORMATION, X RAY TECHNIQUE, METAL HEAT TREATMENT, MAGNETOMETER/(U)KH18N10T STAINLESS STEEL, (U)1KH18N2AG5 STAINLESS STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/1308 STEP NO--UR/0314/70/000/002/0021/0022

CIRC ACCESSION NO--AP0109392
UNCLASSIFIED

2/2 036

UNCLASSIFIED

CIRC ACCESSION NO--AP0109392 PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COLD ROLLED SHEETS OF 1KH18N2AG5
(C 0.07, CR 18.45, NI 2.3, TI 0.0PERCENT) HIGH STRENGTH, NONCORROSIVE
AUSTENITE (GAMMA PHASE) CLASS STEEL, RECOMMENDED FOR REPLACING CR-NI
STEEL KH18N10T AND OTHERS IN CHEM. MACHINERY MANUF. OWING TO ONE-FIFTH
THE NI CONTENT AND HIGHER MECH. STRENGTH OF 1KH18N2AG5 WAS TESTED FOR
INTERCRYST. CORROSION AFTER ANNEALING AT 650-1200DEGREES WITH AIR AND
WATER QUENCHING AND WITH AND WITHOUT PREPLASTIC DEFORMATION IN THE COLD
(0-45PERCENT). CORROSION WAS ABSENT IN CONDITIONS AS DELIVERED AND FOR
20-45PERCENT DEFORMATION AND ANNEALING AT 650DEGREES FOR 2 HR AND IS
ATTRIBUTED TO FORMATION IN DEFORMATION OF INCREASING AMTS. OF LOW C
MARTENSITE (ALPHA PHASE) (25.6PERCENT FOR 45PERCENT DEFORMATION), AS
LAYERS SLIPPED BETWEEN GAMMA GRAINS; THIS IS CONFIRMED BY X RAY AND
MAGNETOMETRIC MEASUREMENTS AND INCOMPLETE ALPHA YIELDS GAMMA REVERSION
DURING THERMAL TREATMENT.

UNCLASSIFIED

USSR

UDC 542.65:546.431

ROKHLENKO, D. A., SOKOL, V. A., KONONOVA, L. I., and BROMBERG, A. V.

"Investigation of the Synthesis and Hot Pressing of BaF_2 Powders in Air"

Moscow, Neorganicheskiye Materialy, Vol 9, No 11, 1973, pp 1932-1935

Abstract: The relationship between synthesis conditions, hot pressing procedure in air, and quality of an optical ceramic of barium fluoride was investigated. BaF_2 particles smaller than 0.5 microns possess the maximum activity when they have been fired at about 500°C. Ceramic elements with a thickness of 3 mm, manufactured from these powders, have a 40% transparency in the visible portion of the spectrum and about 60-80% transparency in the infra-red region with a thickness of 2 to 7 microns. 4 figures, 2 tables, 5 bibliographic references.

1/1

1/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--THERMODYNAMIC STUDY OF THE SOLIDIFICATION AND CORROSION OF ACID
RESISTANT CEMENTS AND CONCRETES UNDER THE INFLUENCE OF ACID MEDIA -U-
AUTHOR--SOKOL, YE.YA., BABUSHKIN, V.I.

5

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 262-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CORROSION RESISTANCE, CEMENT, CONCRETE, GEL, HYDROLYSIS,
SILICA, HYDROGEN ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0463 STEP NO--UR/0080/70/043/002/0262/0267

CIRC ACCESSION NO--AP0104076
UNCLASSIFIED

2/2 023 UNCLASSIFIED PROCESSING DATE--11SEP70
CIRC ACCESSION NO--AP0104076

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CORROSION RESISTANCE OF CEMENTS AND CONCRETES BASED ON WATER GLASS AND NA SUB2 SIF SUB6 DEPENDS ON THE DEGREE OF POLYMN. OF THE GEL THAT IN ITS TURN DEPENDS ON THE PH VALUE OF THE MEDIUM AND THE RATE OF HYDROLYSIS OF NA SUB2 SIF SUB6. THE FIELDS OF STABILITY OF H SUB2 SIO SUB4, H SUB2 SIO SUB3, AND BETA,SIO SUB2 WERE DETD. AT PH SMALLER THAN 8, H SUB4 SIO SUB4 WAS IN AN UNDISSOCD. STATE, AND AT PH GREATER THAN 12 WAS PRESENT AS SIO SUB4 PRIME4 NEGATIVE. AT PH 8 TO 11.71, H SUB4 SIO SUB4 WAS IN EQUIL. WITH H SUB3 SIO SUB4 PRIME NEGATIVE, AND AT PH 11.71 TO 12 WITH H SUB2 SIO SUB4 PRIME2 NEGATIVE. AT PH SMALLER THAN 8, H SUB2 SIO SUB3 WAS IN A UNDISSOCD. STATE, AT PH GREATER THAN 12.18 WAS IN EQUIL. WITH SIO SUB3 PRIME2 NEGATIVE, AND AT PH 8 TO 12.18 WITH HSIO SUB3 PRIME NEGATIVE. AT PH SMALLER THAN 9, BETA,SIO SUB2 WAS STABLE, AT PH 9 TO 11.71 WAS IN EQUIL. WITH H SUB3 SIO SUB4 PRIME NEGATIVE, AND AT PH 11.71 TO 12.0 WITH H SUB2 SIO SUB4 PRIME2 NEGATIVE. AT PH GREATER THAN 12, BETA, SIO SUB2 WAS IN EQUIL. WITH HSIO SUB3 PRIME NEGATIVE, AND SIO SUB3 PRIME2 NEGATIVE. TABLES SHOWING THE DEPENDENCE BETWEEN THE CONCN. OF IONS AND THE PH VALUE IN EQUIL. CONDITIONS ARE GIVEN.

UNCLASSIFIED

SOKOL'CHIK, V.A.

(16)

JPRS 60560

16 November 1973

DISSOCIATING GASES AS COOLANTS AND WORKING SUBSTANCES AT ATOMIC POWER PLANTS

B

Translation of Russian-language materials presented at the Third All-Union Conference by A.K. Krasin, et al., Dissotsiiruyushchiye Gazy kak Teplonositeli i Rabochiye Tela Energoticheskikh Ustanovok, 1973, Minsk, UDC: 621.311+622.987, signed to press 12 April 1973

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16 Nov 73

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USSR

UDC 621.039.524.034.3

NESTERENKO, V. B., KHOREV, V. I., KREMESHNYY, A. I., SOKOL'CHIK, V. A.

"Gas Loop Devices Using a Dissociating Heat Exchange Agent"

Dissotsiiruyushch. gazy kak teplonositeli i rab. tela energ. ustanovok -- V sb. (Dissociating Gases as Heat Transfer Agents and the Working Medium of Power Plants -- Collection of Works), Minsk, Nauka i tekhn. Press, 1970, pp 161-165 (from RZh-Elektrotekhnika i Energetika, No 5, May 1971, Abstract No 5U189)

Translation: Two loop devices designed for studying dissociating heat exchange agents, testing building materials and reserve testing of fuel elements are described. The loop devices are located in the research (IRT-2,000) reactor of the Nuclear Power Institute of the Belorussian SSR Academy of Sciences. The characteristic features inherent in the loop devices operating on the dissociating heat exchange agent are reflected. There are two illustrations and a one-entry bibliography.

1/1

USSR

UDC 620.10

PROKOSHKIN, D. A., Doctor of Technical Sciences, Professor, BYKOV, Yu. A., Candidate of Technical Sciences, docent, SOKOLENKO, I. I., Graduate Student, and NAZARCHIK, N. A., Candidate of Technical Sciences, Senior Scientific Staff Member, Moscow Higher Technical School imeni N. E. Bauman

"The Influence of Residual Stresses Upon the Magnetic Properties of Hot-Pressed Ferrites"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Mashinostroyeniye, No 7, 1972, pp 107-110

Abstract: An investigation is made of the relationship of the magnetic properties of ferrites to internal stresses. It is established that the hot pressing and heat treatment of ferrites bring about the origination of considerable residual internal stresses. It is established that strongly stressed ferrites (hot-pressed, hardened) possess low values of initial magnetic permeability. As a result of the annealing of hot-pressed ferrites, the magnetic permeability increases, and the internal stresses decrease by a factor of about 6.5. 2 figures. 1 table. 3 references.

1/1

USSR

UDC 612.822.3

KOGAN, A. B., YEFIMOV, V. N., and SOKOLENKO, P. T., Problem Laboratory of Biophysics, State University, Rostov-on Don

"Analysis of the Dynamics of Neuron Functioning by Its Impulse Activity"

Leningrad, Fiziologicheskiy Zhurnal SSSR, Vol 56, No 4, 1970, pp 514-517

Abstract: Impulse activity is considered as a continuous process reflecting the functional dynamics of a given nerve. A great number of factors enter into the function of a nerve, such as the distance of its activity, distribution of stimuli, sympathetic and inhibitory affects, trophic and metabolic states, state of excitability and lability of the nerve cell, etc. All these factors are reflected, to some extent, in the measurement of impulse frequencies (frequency-gram) and of the intervals between the frequencies (intervalo-gram). The construction of a histogram (several types are shown) which is a graphic representation of a frequency distribution by means of rectangles, whose widths represent the class of intervals and whose heights represent the corresponding frequencies serves as the pattern of analysis of neuron activity.

1/1

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--ANALYSIS OF NEURON FUNCTIONING DYNAMICS FROM RECORDINGS OF PULSE
ACTIVITY -U-

AUTHOR-(03)-KOGAN, A.B., YEFIMOV, V.N., SOKOLENKO, P.T.

COUNTRY OF INFO--USSR

SOURCE--FIZIOLOGICHESKII ZHURNAL SSSR, VOL. 56, APR. 1970, P. 514-517

DATE PUBLISHED-----APR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--NEUROPHYSIOLOGY, NEURON

CONTROL MARKING--NO RESTRICTIONS

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CIRC ACCESSION NO--AP0124873

UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0124873 UNCLASSIFIED PROCESSING DATE--30OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF PULSE ACTIVITY AS A
CONTINUOUS PROCESS REFLECTING NEURON FUNCTIONING DYNAMICS. A METHOD OF
CONSTRUCTING A GENERALIZED NEURON STATE FUNCTION FROM A PULSE OUTPUT
FLOW IS PROPOSED. THE METHOD IS BASED ON THE CONSTRUCTION OF A SO
CALLED "FREQUENCY GRAM" A PIECEWISE CONTINUOUS FUNCTION OF TIME, THE
VALUES OF WHICH AT EACH POINT ARE EUQAL TO THE RECIPROCAL OF THE
INTERVAL BETWEEN THE PULSES. FACILITY: ROSTOVSKII-NA-DONU
GOSUDARSTVENNYI UNIVERSITET, ROSTOV, USSR.

UNCLASSIFIED